

Further information:

Edenvale Young Associates

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Project Contact:

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Project Description number:

EVY0428

Project Type

Flood Risk/Consequence Assessment

Flood Forecasting

Detailed Design

Calibration & Optimisation

Flood Map Challenges

Scour & Geomorphology

Water Framework Directive

Environmental Impact Assessment

Training

Key Words:

Hydro-electric Scheme

Geomorphology study

Field survey

Water Framework Directive

Client and other Organisations:

Landowner

Robert Parkins, Civil Engineer

Mosedale Beck, HEP Scheme

Edenvale Young Associates were commissioned to investigate the impacts of proposed Hydro-Electricity Scheme on Mosedale Beck, Threlkeld in Cumbria. These proposed scheme involve the installation of an upstream intake weir, a buried pipeline, a turbine house and an outlet to return natural flows.



Illustration 1: Mosedale Beck

Project Details

Located in the Lake District National Park, Mosedale Beck is a steep stream which drains the wet Cumbrian highlands, cutting through glacial till and flows into the River Glenderamackin.

The hydro power scheme intends to take advantage of the 200 m vertical drop over the 4.5 km of watercourse between the intake and the turbine house.

However, the site is included upstream in a SSSI for exceptional geomorphology and downstream in the SSSI/SAC of the River Glenderamackin. Moreover, the waterbody fails to reach the Good Ecological Potential.

A Geomorphological study has been undertaken in order to assess the potential impacts of the proposed abstraction on the geomorphology and flow regimes. To achieve this, the following approach has been adopted:

- Desk based study to characterise the catchment (geology, FEH description, natural flow and flow changes. Historical uses)

- Field surveys (habitat and channel typology recording, photographic record of key features)

As a result, an assessment could be made to:

- Evaluate how the channel is likely to respond to changes in flow regime and sediment transfer.
- Identify the new hydrological regime is capable to ensure the conveyance of sediments.
- Indicate of any likely impact to the broader geomorphology of the derogated reach.
- Graduate habitat changes and accessibility.

According to the assessment, recommendations have been provided to inform design modifications or incorporate measures to address any adverse impacts identified.

The study shown that the flow abstraction would not have few impact on Mosedale Beck's natural processes.